

WHAT IS CLAIMED IS:

1. A gas turbine combustor comprising:

a combustor inner cylinder;

a diffusion flame formation cone which is disposed
5 inside of the combustor inner cylinder and which forms
diffusion flames by mixing pilot fuel with air;

a premixed flame formation nozzle which is provided
annularly between the combustor inner cylinder and a pilot
flame formation cone and which forms premixed flames out
10 of premixed gas formed by mixing main fuel with the air;
and

a premixed flame formation nozzle extension section
which is disposed at an outlet of the premixed flame formation
nozzle and which forms a flow of premixed gas turning in
15 a peripheral direction of the combustor inner cylinder while
being directing outward in a diameter direction of the
combustor inner cylinder.

2. The gas turbine combustor according to claim 1 further
20 comprising a combustor inner cylinder cooling unit which
is provided on a portion on which at least premixed flames
formed by the premixed flame formation nozzle or flames
formed by the gas ejected from the mixed gas formation
cylinder are struck against an inner periphery of the
25 combustor inner cylinder.

3. A gas turbine combustor comprising:

a combustor inner cylinder;

a diffusion flame formation cone which is disposed inside of the combustor inner cylinder and which forms diffusion flames by mixing pilot fuel with air;

a premixed flame formation nozzle which is provided annularly between the combustor inner cylinder and a pilot flame formation cone and which forms premixed flames out of premixed gas formed by mixing main fuel with the air;

10 and

a premixed flame formation nozzle extension section which is disposed at an outlet of the premixed flame formation nozzle while being inclined outward in a diameter direction of the combustor inner cylinder and in a peripheral direction of the combustor inner cylinder with respect to an axial direction of the combustor inner cylinder, and which ejects premixed gas formed at the premixed flame formation nozzle.

4. The gas turbine combustor according to claim 3, further comprising a combustor inner cylinder cooling unit which is provided on a portion on which at least premixed flames formed by the premixed flame formation nozzle or flames formed by the gas ejected from the mixed gas formation cylinder are struck against an inner periphery of the combustor inner cylinder.

5. A gas turbine combustor comprising:

a combustor inner cylinder;

a mixed gas formation cylinder which has a nozzle ejecting pilot fuel and a nozzle ejecting main fuel, and
5 which is disposed inside of the mixed gas formation cylinder;
and

a mixed gas ejection extension section which is disposed at an outlet of the mixed gas formation cylinder while being inclined outward in a diameter direction of the
10 combustor inner cylinder and in a peripheral direction of the combustor inner cylinder with respect to an axial direction of the combustor inner cylinder, and which ejects gas formed by mixing the pilot fuel with air and premixed gas formed by mixing the main fuel with the air.

15

6. The gas turbine combustor according to claim 5, further comprising a combustor inner cylinder cooling unit which is provided on a portion on which at least premixed flames formed by the premixed flame formation nozzle or flames
20 formed by the gas ejected from the mixed gas formation cylinder are struck against an inner periphery of the combustor inner cylinder.